

**Genetics: The Science of Heredity** ▪ *Guided Reading and Study***Mendel's Work** (pp. 76–81)

*This section describes how Gregor Mendel identified the method by which characteristics are passed from parents to their offspring.*

**Use Target Reading Skills**

*As you read, complete the outline about Mendel's work. Use the red headings for the main idea and the blue headings for the supporting ideas.*

**I. Mendel's experiments**

A. crossing pea plants

B.

C.

D.

**II.**

A.

B.

C.

D.

**Introduction** (p. 76)

1. Gregor Mendel experimented with hundreds of pea plants to understand the process of \_\_\_\_\_.

Match the term with its definition.

Term	Definition
_____ 2. heredity	a. The scientific study of heredity
_____ 3. genetics	b. Physical characteristics
_____ 4. traits	c. The passing of traits from parents to offspring

**Mendel's Experiments** (pp. 77–78)

5. In a flower, the female sex cells, or eggs, are produced by the \_\_\_\_\_. Pollen, which contains the male sex cells, is produced by the \_\_\_\_\_.

6. What are purebred organisms?

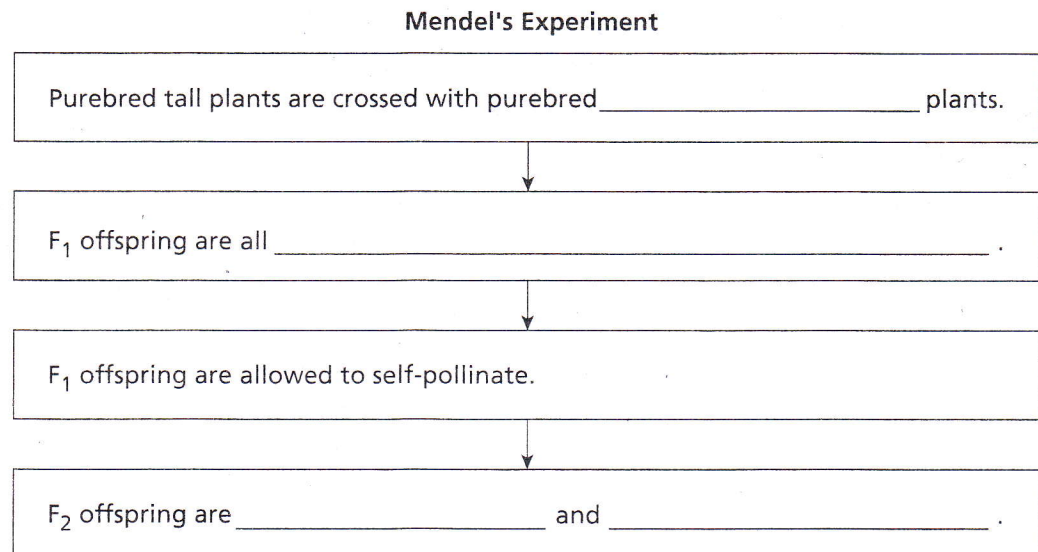
---

---

---

**Genetics: The Science of Heredity** ▪ *Guided Reading and Study***Mendel's Work** (*continued*)

7. Complete the flowchart below, which summarizes Mendel's first experiment with pea plants.



8. Circle the letter of other traits in garden peas that Mendel studied.
- a. seed size, seed shape, seed color
  - b. seed color, pod color, flower shape
  - c. flower size, pod shape, seed coat color
  - d. pod color, seed shape, flower position
9. Two forms of the trait of seed shape in pea plants are \_\_\_\_\_ and \_\_\_\_\_.

**Dominant and Recessive Alleles** (pp. 79–81)

10. Circle the letter of each sentence that is true about alleles.
- a. Recessive alleles are never present when dominant alleles are present.
  - b. Alleles are different forms of a gene.
  - c. Dominant alleles always show up in the organism when the allele is present.
  - d. Recessive alleles hide dominant alleles.
11. Is the following sentence true or false? Only pea plants that have two recessive alleles for short stems will be short. \_\_\_\_\_

**Genetics: The Science of Heredity** ▪ *Guided Reading and Study*

Match the pea plant with its combination of alleles.

Pea Plant	Combination of Alleles
_____ 12. purebred short	a. Two alleles for tall stems
_____ 13. purebred tall	b. One allele for tall stems and one allele for short stems
_____ 14. hybrid tall	c. Two alleles for short stems

15. A dominant allele is represented by a(n) \_\_\_\_\_ letter.
16. A recessive allele is represented by a(n) \_\_\_\_\_ letter.
17. How would a geneticist write the alleles to show that a tall pea plant has one allele for tall stems and one allele for short stems?  
\_\_\_\_\_
18. Is the following sentence true or false? Some scientists during Mendel's time thought Mendel should be called the Father of Genetics.  
\_\_\_\_\_